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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/643,956	08/20/2003	Chun-Ying Chen	1875.4150000	4985
26111	7590	11/22/2004	EXAMINER	
STERNE, KESSLER, GOLDSTEIN & FOX PLLC 1100 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			RILEY, SHAWN	
			ART UNIT	PAPER NUMBER
			2838	

DATE MAILED: 11/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/643,956

Applicant(s)

CHEN, CHUN-YING

Examiner

Shawn Riley

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15-26 and 28 is/are allowed.
- 6) ☒ Claim(s) 1 and 27 is/are rejected.
- 7) ☒ Claim(s) 2-14 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 U.S.C. § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1 and 27 are rejected under 35 U.S.C. §102(a) as being fully anticipated by Zadeh et al. (U.S. Patent 6,522,111). Zadeh et al shows, (in, e.g., the(ir) figures 4 and corresponding disclosure)

As to claim 1;

A voltage regulator comprising: a first stage (220/222/240/242) capable of receiving a reference voltage (V_{REF} , see, e.g., column 3 lines 34-40) and capable of having a first current flowing through the first stage (the current flowing is through, e.g., the FET, 252); a second stage (230/324/364/262), coupled to the first stage, capable of having a second current flowing through the second stage (current flows through 324/230 and 364/262); and a third stage(114), coupled to the second stage, capable of outputting an output voltage (V_{OUT}) and capable of having a third current flowing through the third stage (through 114), wherein the first, second and third currents are proportional to each other throughout a range of operation of the voltage regulator between substantially zero output current and maximum output current (as the amplifier 220/222/240/242 increases/decreases output, the second and third stage react in a proportional manner).

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As to claim 27;

The regulator of claim 1, further including a feedback stage with a resistor divider (R1/R2) between the third stage and the first stage, wherein a feedback voltage from the resistor divider controls an amplification of the first stage.

Allowable Subject Matter

3. Claims 15-26 and 28 are allowable over the prior art of record. Claims 2-14 are objected to as being dependent on a rejected claim but would be allowable if written in independent form.

4. As allowable subject matter has been indicated, applicant's response must either comply with all formal requirements or specifically traverse each requirement not complied with. See 37 C.F.R. § 1.111(b) and section 707.07(a) of the M.P.E.P.

5. The following is an examiner's statement of reasons for allowance: No prior art uncovered anticipates or renders obvious applicant(s) claimed voltage regulator as claimed including a drop-out voltage of the regulator is no more than approximately 14 millivolts.

Further, no prior art uncovered anticipates or renders obvious applicant(s) claimed voltage regulator as claimed including a third stage includes a pass transistor, and the second stage includes a first mirror transistor and an input transistor in series with the first mirror transistor, and wherein a gate of the first mirror transistor is driven by the same voltage as a gate of the pass transistor.

Further, no prior art uncovered anticipates or renders obvious applicant(s) claimed voltage regulator as claimed including a first stage receiving a reference voltage and having a first current flowing through the first stage; a second stage having a second

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current flowing through the second stage; and a third stage outputting an output voltage and having a third current flowing through the third stage, wherein the first stage drives the second stage as a low input impedance load or a phase margin of the voltage regulator being at least 60 degrees.

Conclusion

Any inquiry from other than the applicant/attorney of record concerning this communication or earlier communications from the Examiner should be directed to the Patent Electronic Business Center (EBC) at 1.866.217.9197. Any inquiry from a member of the press concerning this communication or earlier communications from the Examiner or the application should be directed to the Office of Public Affairs at 703.305.8341. Any inquiry from the applicant or an attorney of record concerning this communication or earlier communications from the Examiner should be directed to Examiner Riley whose telephone number is 571.272.2083. The Examiner can normally be reached Monday through Thursday from 7:30-6:00 p.m. Eastern Standard Time. The Examiner's Supervisor is Mike Sherry who can be reached at 571.272.2084. Any inquiry about a case's location, retrieval of a case, or receipt of an amendment into a case or information regarding sent correspondence to a case **should be directed to 2800's Customer Service Center** at 571.272.2815. Any papers to be sent by fax MUST BE sent to fax number 703.872.9306. Any inquiry of a general nature of this application should be **directed to the Group receptionist** whose telephone number is 571.272.2800. Status information of cases may be found at <http://pair-direct.uspto.gov> wherein unpublished application information is found through private PAIR and published application information is found through public PAIR. Further help on using the PAIR system is available at 1.866.217.9197 (Electronic Business Center).

November 04



Shawn Riley
Primary Examiner